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March 23, 2009

Mr. William Schuster
U. S. Nuclear Regulatory Commission
Research and Test Reactors Branch A
Office of Nuclear Reactor Regulation
Mail Stop O12-G13
One White Flint North
11545 Rockville Pike
Rockville, MD 20852-2738

Reference: Oregon State University TRIGA Reactor (OSTR)
Docket No. 50-243, License No. R-106

Subject: Submission of Transportation Quality Assurance Plan

Mr. Schuster:

With this letter, we are requesting review and approval of our Quality Assurance (QA) Program for the transportation of irradiated TRIGA® fuel. Attached you will find our proposed QA Program. This QA program is submitted under the requirements of 10 CFR 71. We have also developed a set of procedures associated with this program that have not been included in the attachment.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: 3/23/09.

Sincerely,

Steve Reese
Director

Attachment

cc: Document Control, NRC
Al Adams, NRC
Craig Bassett, NRC
John Cassady, OSU
Rich Holdren, OSU
Todd Palmer, OSU
Todd Keller, OSU

Q004
A020

Attachment

Oregon State University
Quality Assurance Program

Oregon State University

QUALITY ASSURANCE PROGRAM

1 INTRODUCTION

The Quality Assurance Program submitted here is to assist in the handling of shipments of irradiated TRIGA® type reactor fuel.

The Quality Assurance Program will be the responsibility of Senior Health Physicist at Oregon State University. The transport of all radioactive material will be done by a licensed carrier. The shipping container will be Type B containers with an approved Certificate of Compliance (CoC). The containers will usually be on lease or loan from entities such as the Department of Energy or prime contractor.

Oregon State University does not design, fabricate, assemble, or test type B containers, and does not intend to procure any type B container for ownership or lease to others. Oregon State University does not intend to rework, repair, maintain or modify the type B container.

The QA Program is submitted pursuant to 10 CFR Part 71.

2 ORGANIZATION

Figure 1 shows the organization chart for the operation of the reactor facility. The Quality Assurance Program will be performed by this organization. Approval of procedures is covered under OSTROP 6, *Administrative Procedures*. The Senior Health Physicist will have primary responsibility for monitoring all packaging, shipping and receiving activities.

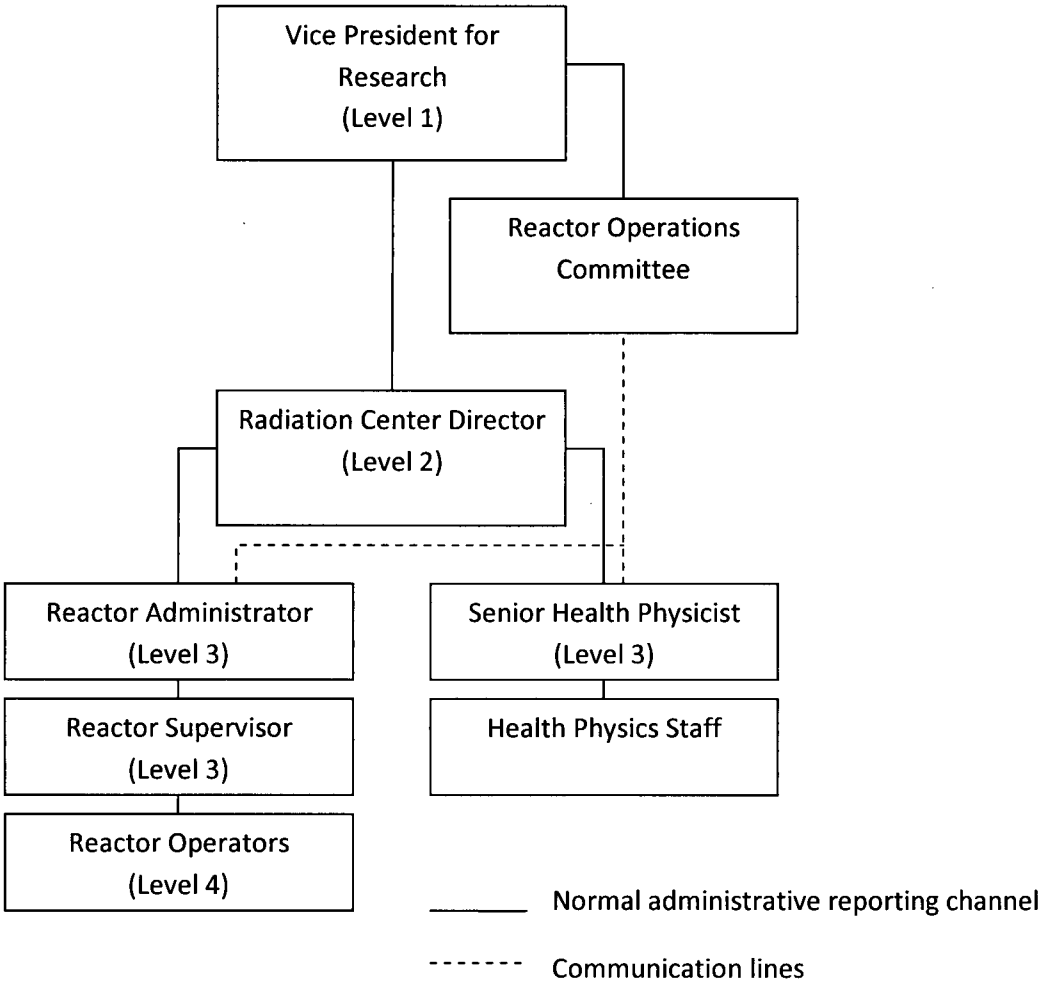

Figure 1

3 QUALITY ASSURANCE PROGRAM

The scope of the program includes handling, loading and delivering to a carrier an approved package for the transport of TRIGA® fuel or other radioactive material. The shipments will be periodic in nature and will occur at a maximum frequency of up to several shipments per year. Quality assurance will be exercised primarily through the use of written procedures constructed from regulatory requirements, applicable Oregon State TRIGA Reactor Operation Procedures

(OSTROP), Radiation Center Health Physics Procedures (RCHPP), specific procedures developed by the manufacturer of the package, and other procedures or safeguards developed during review of packaging and transportation planning. Quality Assurance will be affected by formatting these procedures as check-lists (or equivalent) to be used by the individuals or their designates who are responsible for quality assurance.

4 PACKAGE DESIGN CONTROL

Design activities related to packages will not be performed by the Oregon State University.

5 PROCUREMENT DOCUMENT CONTROL

Procurement activities related to packages will not be performed by Oregon State University. The proper procurement document control shall be the responsibility of the supplier of the designated package.

6 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

Activities important to safety will be ensured by following all manufacturer's instructions, procedures, and limitations as they relate to the safe use of the packages.

7 DOCUMENT CONTROL

Control shall be exercised over the documents that are used in this shipping activity. The documents include a master document check-list, inspection procedures, loading and unloading procedures, package certification documents, radiation survey records, and shipping papers. Changes shall be implemented by the procedures outlined in OSTROP6, *Administrative Procedures*.

8 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

No materials or equipment are to be purchased for this activity. Any required services such as container off-loading and carrier transport will be procured via normal University procedures.

9 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS

No materials, part or components are to be identified or controlled for this activity. Replacement parts will be obtained from the manufacturer or certificate holder.

10 CONTROL OF SPECIAL PROCESSES

No special processes are to be undertaken for this activity.

11 INTERNAL INSPECTION

The following inspection activities will be implemented for each packaged procured for shipping purposes:

11.1 Receiving Inspections

Inspections will be performed to ensure the integrity of containers that are used for transportation purposes. Visual inspection will include surface conditions, structural integrity, gaskets and flanges, tie-downs, labeling and marking, and other features as specified by the certificate holder.

11.2 Final Inspections

Checklists will be established to ensure inspections are performed to verify:

1. Proper package assembly
2. Moderators and neutron absorbers are present (if applicable)
3. Valves are set to specification and to prevent tampering
4. Shipping papers are properly completed
5. Packages are conspicuously and durably marked in compliance with USDOT regulations
6. Measures are established to ensure that appropriate personnel designated by the package user sign shipping tags or indicators prior to the authorization for shipping

11.3 Maintenance Inspections

These inspections will not be performed under this activity unless specifically designated by the package standard operating procedures.

11.4 Inspection Documentation

Inspection records will be maintained to document performance of inspection activities.

12 TEST CONTROL

12.1 Procedures

Measures will be established to ensure that applicable tests, surveys, or other measurements be performed according to manufacturer's instructions. Properly calibrated equipment will be used and methods for documenting tests will be established.

12.2 Acceptance Tests

Measures will be established to ensure that acceptance tests (as applicable) are performed prior to offering a package for transport. Tests may include structural integrity, leak tightness, component performance, and shielding and thermal integrity.

12.3 Results

Measures will be established to ensure that test results are documented, evaluated, and maintained as QA records. The Senior Health Physicist will determine acceptability of the records.

13 CONTROL OF MEASURING AND TEST EQUIPMENT

13.1 Calibration Control

Gauges, reference standards, etc are not expected to be used for this activity. The exception to this is the use of radiation measuring equipment. This equipment will be properly calibrated with traceable standards according to existing standard operating procedures.

13.2 Out of Calibration Equipment

Radiation measuring equipment that is out of calibration will not be used.

14 HANDLING, STORAGE, AND SHIPPING CONTROL

14.1 Preservation

Measures will be established to ensure that cleaning, handling, storage, and shipping are accomplished in accordance with the package design requirements to prevent damage or deterioration by environmental conditions. Provisions for use of special equipment such as cranes or lifting devices will to adequately identify and protect package components. Conditions identified in the CoC will be adhered to when unloading packaging.

14.2 Preparation, Release and Delivery to Purchaser

Measures will be established to ensure that the following requirements are completed prior to shipping:

1. Cavities have been adequately dried.
2. All conditions have been completed prior to offering for transport.
3. All USNRC and USDOT requirements have been satisfied prior to offering for transport.

4. All shipping papers have been completed and reviewed by qualified personnel for accuracy and completeness.

15 INSPECTION, TEST, AND OPERATING STATUS

A master check-list will be established to track the status of inspections, test, and operating conditions.

16 NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

This section does not apply to this activity.

17 CORRECTIVE ACTION

17.1 Reporting

Causes of conditions that are detrimental to quality will be promptly identified and reported to the Senior Health Physicist. Measures will be established to identify any corrective action from suppliers are obtained and that corrective actions were implemented and effective.

18 QUALITY ASSURANCE RECORDS

18.1 General

QA records will be generated for each activity that is performed during the receipt, unloading, opening and closing, loading, preparation of shipping papers, and adherence to conditions specified by the manufacturer. The records will demonstrate delivery to a carrier and have evidence to show that USNRC and USDOT requirements have been satisfied.

Inspection and test records will identify the test or observation, show that the tests or inspections were complete, record test or survey data, identify any conditions that are non-conforming or are detrimental to quality, names of individuals performing the tests or inspections, and whether the results were acceptable.

18.2 Generating Records

Measures will be established to generate and store records. Paper copies of records generated will be stored in secure files. Additionally documents will be scanned in a pdf format for electronic storage.

18.3 Indexing and Classification Records

Records generated for these activities will be designated as non-permanent and will be retained for a period of at least 3 years.

18.4 Receipt, Retrieval, and Disposition of Records

The records generated by these activities will be maintained by the Senior Health Physicist. Procedures are in place for storage of records that relate to transportation and health physics activities that relate to the use of licensed material at the University.

18.5 Storage, Preservation, and Safekeeping

Measures will be established to maintain records for the required period. Measures to be established include:

1. Prevention of damage from fire, flood, or other environmental damage
2. Record will be filed in folders in steel storage cabinets
3. Electronic records will be stored on a server which is backed up daily in a remote location
4. Unauthorized personnel will not have access to records
5. Electronic information is accessible to authorized users with password only access
6. Data will be electronically stored as read only pdf files
7. Damaged records will be promptly replaced

19 AUDITS

19.1 Elements of an Audit Program

Due to the small number of uses of any Type B package an audit will be conducted after each use of a package. An auditor will be appointed by the Senior Health Physicist. The conditions of Regulatory Guide 7.10 Section 18.1 will be met in establishing an audit program.

19.2 Scheduling of Audits

An audit will be performed after each Type B shipment to ensure that elements of the program are in place and that appropriate documentation was generated and maintained.

19.3 Team Selection

Due to the small scope of this activity an independent individual will be chosen that has an understanding of the program and the requirements for compliance.

19.4 Various Audit Actions

The auditor will meet prior to the audit to discuss scope and objectives and after the audit to discuss findings, clarify facts, and to ensure all appropriate information has been gathered. A report will be generated to identify deficiencies and a response is required to address deficiencies. The auditor will ensure that a schedule for resolving the items identified is presented and that corrective action is implemented.